REMARKS

In response to the Office Action, and in an effort to put the pending claims in condition for allowance, Applicants have amended independent claim 22. No new matter has been introduced by the amendments.

The amended claim 22 now recites "a reinforcing fiber-containing woven fabric comprising a resin comprising a solvent, (ii) a binder distributed in a line-like manner to maintain yarn flatness of yarns of the reinforcing fiber-containing woven fabric, wherein said solvent is substantially incompatible with said binder ... ." The pending amendments and new claims are fully supported by the disclosure, *e.g.*, on page 16, lines 11-23, and the Examples in the specification.

The Examiner has rejected claims 22-28, 40, 43 and 44 as allegedly being obvious over Kishi in view of Homma. This rejection is respectfully traversed.

The Examiner does not dispute the fact that neither Kishi nor Homma disclose or suggest the feature that the solvent is substantially incompatible with the binder, as recited in claim 22. The Examiner nevertheless alleges that as "the solvent is not present in said final product." See paragraph 3 of the Action.

Applicants respectfully disagree with the Examiner's position that the solvent is not present in the final product (or that the limitation does not manipulatively affect said final product). In the embodiments of this invention, a solvent is added to a resin which is then impregnated into a woven fabric. The impregnated woven fabric is then passed through a drying tower (see Figure 1 of the specification) wherein the drying is undertaken in at least half the drying zone at a temperature *below* the boiling point of solvent other than in Comparative Example 5 (see comment D on page 28, lines 15-20, of the specification). When drying is undertaken in the manner stated in the specification during the manufacturing of the cloth prepregs of Examples, there is simply no way for all the solvent present in the resin to evaporate from the resin such that "the solvent is not present in said final product" as alleged by the Examiner. Thus, the resin in the final product, which is the cloth prepreg, of the Examples other

than possibly Comparative Example 5 will *inevitably* contain the solvent, at least in trace amounts if not more. Applicants respectfully submit that any person of ordinary skill in this art would realize this fact.

Applicants respectfully submit that even to dry a wet fabric after been spun in a washer it normally takes at least half an hour to an hour of drying in a hot air drier. On the other hand, on page 15, lines 11-22, the specification states that the line speed of the cloth prepreg in the manufacturing unit of Figure 1 could be between 1.5 to 5 meters per minute and the height of the drying tower could be between 8 to 15 meters. This means that the *maximum* time that the resin impregnated cloth prepreg could have spent residing in the right half of the drying zone where the temperature was above the boiling point of the solvent during the manufacture of the cloth prepregs of the Examples would have been 10 minutes or less. As persons of ordinary skill in this art would recognize, it is simply *impossible* to bone-dry a resin such that there is no solvent therein, particularly by exposing the resin impregnated cloth prepreg to hot air at a temperature slightly higher (about 20 to 25°C higher – see Table 1-4 of the specification) than the boiling point of the solvent for 10 minutes or less as was done during the manufacturing of the cloth prepregs of the Examples. Please note that the specification uses the phrases "to dry the remaining solvent" (page 16, line 1) and "solvent dried fabric" (page 16, line 9). However, "[d]rying is a relative term and means merely that there is reduction in moisture [or other liquids] from an initial value to some acceptable final value." See *Unit Operations of Chemical Engineering*, McCabe and Smith, 771, 3rd Ed. (1976). In short, these phrases related to drying in the specification simply mean reduction in the solvent from an initial value to some acceptable final value in the cloth prepreg of the claimed invention.

Kishi and Homma *as a whole* do not disclose either "a reinforcing fiber-containing woven fabric comprising a resin comprising a solvent ... wherein said solvent is substantially incompatible with said binder ... " or "wherein the reinforcing fiber-containing woven fabric comprises the solvent in an amount such that the cloth prepreg has a cover factor of at least

90%." Thus, the obviousness rejection of claims 22-28, 40, 43 and 44 over Kishi in view of Homma should be withdrawn.

The Examiner also states that the limitations regarding the solvent are "not necessarily given patentable weight in final product claims unless said steps or intermediate products manipulatively affect said final product." See paragraph 3 of the Action.

Applicants respectfully submit that the claimed feature "wherein said solvent is substantially incompatible with said binder" *does indeed* "manipulatively affect said final product" (see *supra*) as the claimed cloth prepreg with this claimed feature shows *unexpected results* over a cloth prepreg *without* this claimed feature. To demonstrate the unexpected results, Applicants submit that the Examiner should refer to comments A, B and C on page 28, lines 1-14 of the specification, which clearly prove by experimental evidence that when the solvent was substantially incompatible with the binder, then cloth prepregs with high cover factor of 90% or higher were obtained. On the other hand, when the solvent was compatible with the binder (Comparative Examples 3 and 4 of the specification), then cloth prepregs with cover factors of 45% and 40% were produced in Comparative Examples 3 and 4, respectively (see Table 3 on page 26).

Furthermore, Applicants respectfully submit that the claimed feature "wherein the reinforcing fiber-containing woven fabric comprises the solvent in an amount such that the cloth prepreg has a cover factor of at least 90%" also *does indeed* "manipulatively affect said final product" (see *supra*) as the claimed cloth prepreg with this claimed feature shows *unexpected results* over a cloth prepreg *without* this claimed feature. To demonstrate the unexpected results, Applicants submit that the Examiner should refer to comment D on page 28, lines 15-20 of the specification, which clearly proves by experimental evidence that when the solvent was only partially removed from the resin by setting the temperature of the hot air in the first half of the drying tower of Figure 1 to be below the boiling point of the solvent, then a cloth prepreg with a high cover factor of 95% was obtained in Example 3. On the other hand, when the solvent was substantially removed from the resin by setting the temperature of the hot air in the first half *and*

the second half of the drying tower of Figure 1 to be above the boiling point of the solvent, then a cloth prepreg with a cover factor of 80% was produced in Comparative Example 5.

In accordance with the decision in *In re Soni*, 34 USPQ 2d 1684, 1687-88 (Fed. Cir. 1995), Applicants respectfully submit that it would be improper to arrive at a finding that the Applicants have not established unexpected results. The Federal Circuit in *In re Soni*, 34 USPQ 2d 1684, 1687-88 (Fed. Cir. 1995) stated:

> Here, Soni's specification contains more than mere argument or conclusory statements; it contains specific data indicating improved properties. It also states that the improved properties provided by the claimed compositions "are much greater than would have been predicted given the difference in their molecular weights." . . .

Furthermore, please note that "[c]onsistent with the rule that all evidence of non-obviousness *must* be considered when assessing patentability, the PTO *must* consider comparative data in the specification in determining whether the claimed invention provides unexpected results." *Id.* [Emphasis added].

In short, Applicants respectfully submit the following:

(1) The USPTO has failed to establish a *prima facie* case of obviousness.

(2) Applicants have demonstrated *unexpected results* by showing that the final product, i.e., the claimed cloth prepregs of claim 22, have unexpected properties over cloth prepregs that do not have the claimed features recited in claim 22.

Applicants further submit that the pending claims, as amended, are now in condition for allowance, early notice of which is respectfully solicited.

In the event that the transmittal letter is separated from this document and the Patent & Trademark Office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time and authorizes the Commissioner to charge

the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952,** referencing 360842003400.

Respectfully submitted,

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